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Industry News

Porvair Licenses ORNL Fuel Cell Technology

Porvair Fuel Cell Technology, an advanced materials company, has **licensed a fuel cell technology developed by the Oak Ridge National Laboratory** (ORNL). Porvair will use the patent-protected, porous carbon composite and moldable bi-polar plate for testing on Proton Exchange Membranes fuel cell stacks. The company plans to incorporate ORNL's technology, into its pilot plant facilities in Hendersonville, North Carolina, for the next 90 days and will follow with optimization and scale-up to full production. *PR Newswire*, *Porvair Press Release*, May 30

Capstone Receives Safety Certification, Enters Agreement to Offer Uninterruptible Power

Underwriters Laboratories Inc. (UL) certified Capstone Turbine Corporation's Model 330 microturbine as **meeting its UL1741 utility interactive requirements.** The UL standard addresses safety concerns related to grid-connected power generators and may eliminate the need for hardware and individual site verification. Capstone is the only microturbine generator to achieve this safety certification.

Capstone has also entered into a development agreement with MGE UPS Systems, a company providing power protection solutions to computer data centers, telecommunications, and industrial operations. MGE's Uninterruptible Power Supplies (UPS) technology will be combined with Capstone's microturbines to **offer clean, reliable, and continuous power.**

In This Issue:

The President and CEO of Capstone, Dr. Ake Almgren, met with President George W. Bush and Governor Gray Davis on May 29 with 11 other business executives to discuss energy issues. According to Capstone's press release, President Bush was curious about specific uses for microturbine systems, and Capstone provided examples of combined heat and power applications, hybrid electric vehicles, and power quality and reliability installations. *Capstone Turbine Corporation Press Releases*, May 29

New Wind Turbine to be Installed in Nebraska

The Omaha Public Power District has received approval to install its **first wind turbine** as part of its effort to expand renewable energy resources. The 660-kW Vestas turbine will be located at Valmont Industries near Valley, Nebraska. Although the state is ranked sixth in the nation in terms of wind potential, this will only be the fifth wind turbine installed in Nebraska. There are two wind turbines located near the South Dakota border and another two turbines north of Lincoln. *Wind Energy Weekly*, May 25

Policy News

CA State Senate Passes Revenue Bond Bill

The California State Senate has passed a bill that would allow cities and counties to issue revenue bonds for the construction of power plants, allowing the communities to generate their own electricity. According to the bill's sponsor, Senator William "Pete" Knight (R-Palmdale), the legislation would help cities raise funds "so they can be more self-sufficient and **independent from the current power grid** that isn't as reliable." The bill, SB 207, would change current law, which forbids the use of revenue bonds for electric energy purposes. *State Senator Knight Press Release*, May 24

Nevada Legislature Passes RPS Legislation, Senate Amends Energy Bill

On May 23 the Nevada legislature passed an energy bill, SB 372, that includes a renewables portfolio standard (RPS) of 15 percent by 2013. If adopted by the Governor, the legislation could possibly create a market for about 260 MW of new renewables by 2003 and about 1,000 MW of new renewables by 2013. The bill has been delivered to the governor for signature and must be signed within five business days of passage in order to become law.

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The market potential for combined heat and power (CHP) is over 200 GW by 2020 (20+% of capacity). Currently installed CHP is approximately 56 GW.*

A week later, the state Senate approved amendments to AB 661, a bill that would allow large energy users to buy electricity from competitors of regulated, monopoly utilities. **Stricken from the bill** were provisions to create a renewable energy fund and to allow residential customers who **generate their own power to sell excess power to utilities.** The amended AB 661 now goes back to the state Assembly, which may request a conference committee to resolve differences between the two versions of the bill. *Wind Energy Weekly*, May 25; *Las Vegas Review-Journal*, May 31

Minnesota Passes Renewables Legislation

The Minnesota legislature passed a bill May 28 that establishes annual targets for all utilities in the state to supply a small percentage of their electricity from renewable energy sources, amounting to 10 percent by 2015, and requires all utilities to offer green pricing programs. (The legislation does not provide for enforcement of the renewables portfolio standard targets.) In addition, customers will be able to choose to purchase a certain amount of their electricity from renewable energy or **distributed generation such as fuel cells and microturbines operated with renewable fuels.** The bill has been sent to Governor Ventura for signature. *Wind Energy Weekly*, May 25

U.S. Senate Committee Hears Testimony from Ingersoll-Rand on Microturbine Technology

The U.S. Senate Environment and Public Works Committee held a hearing on new and innovative environmental technologies on May 30 in Durham, New Hampshire. The Senior Vice President and President of Ingersoll-Rand's (IR) Independent Power Sector provided testimony **describing how microturbine technology helps address U.S. energy needs** and mentioning the barriers and challenges involved in the implementation of microturbine technology and solutions such as federal tax credits. IR also displayed its PowerWorks microturbine at the event and played an educational video explaining how the technology operates.

Ingersoll-Rand Press Release, May 30

DOE News

Feasibility Study Kickoff in Boulder City

A kickoff meeting to begin a feasibility study for a large energy storage system took place on May 22, 2001 in Boulder City, NV. The study, funded by DOE through Sandia, will explore the technical and economic feasibility of using a large 10MW battery system for load shifting. Boulder City is a particularly advantageous location because large amounts of unused energy are available from Boulder Dam where water has to continue flowing during the night for irrigation purposes. The resulting day/night differential amounts to some 10 cents/kWh. Potential advanced battery technologies are the Sodium Sulfur, Vanadium Redox, Zinc Bromine, and Regenesys batteries. The winning submission for the competitive procurement was provided by the internationally well known firm of Black&Veatch. Participants in the kickoff meeting included Sandia and Black&Veatch personnel, as well as representatives from the mayor's office and the municipal utility who are firm supporters of the project. If successful this project may well become a prototype for similar system throughout the country.

Lawrence Berkeley National Laboratory Launches New Web Sites to Serve CA

The Department of Energy's Lawrence Berkeley National Laboratory (LBL) has recently launched two new web sites focused on providing information on energy efficiency and supply and demand.

On May 23 the lab released *The 20% Solution* Web site (www.savepower.lbl.gov) which **identifies energy efficiency measures** and their predicted savings for Californians. Viewers indicate where they live in California, the size of their home, and whether or not they have air conditioning. The site provides 10 to 20 suggestions on ways to save energy this summer based on the information submitted. The recommendations fall into three categories: no-cost measures, low-cost measures, and more expensive measures.

LBL provides data in real time on California's **demand for electricity** and the **supply available** on its web site at energycrisis.lbl.gov. The site also shows power imports and exports and the generation capacity that is out of service. Researchers at the lab designed the site to help consumers know when to reduce their power consumption and to facilitate a better understanding of the sources of the state's energy shortages. Information for the site is provided by the California Independent Systems Operator, the California Energy Commission, and other sources. *Lawrence Berkeley National Laboratory Research News*, May 23 and 29

Environmental News

Green Mountain Energy and American Forests Participate in Texas Fresh Air Project

American Forests and Green Mountain Energy Company are participating in the Texas Fresh Air Project, part of the state's Electric Choice Pilot Program. Green Mountain will sponsor the **planting of 10,000 native trees in Texas** to help restore damaged forest ecosystems and provide clean air. During the

(Continued on page 3)

Current CHP installation is 7% of U.S. generation capacity and has the potential to reach 11% by 2010 and 18% by 2020.*

Power Crunch

Office of Power Technologies Sponsors Fuel Cells Summit V

On May 30-31, the Office of Power Technologies held Fuel Cells Summit V at the University of Maryland, College Park campus. The purpose of the summit is to coordinate private and public sector efforts on codes, standards, and institutional activities affecting fuel cell power plants. Summit V provided a brief overview of the status of fuel cell RD & D, identified remaining gaps in the codes and standards for stationary, portable, and vehicular applications, presented the results of the Tri-Cities code official case study, and determined the remaining barriers, roles, and responsibilities as new gains toward commercialization are made.

Panel discussions led by Guy Tomberlin, County of Fairfax; Harry Jones, Underwriters Laboratory; Alan Mace, Idatech; Tony Androsky, SAE; Chris Fennell, National Association of Home Builders Research Center; and Tim Bernadowski, Dominion Power, on the first day of the Summit provided updates on the status of commercialization efforts and identified further needs and barriers. The panels included representatives from utilities, code officials, home builders, and manufacturers. The day concluded with a barbecue and tour of the Cooling, Heating, and Power for Buildings Test Site on campus. On the second day the participants broke out into four small groups: commercial, residential, portable, and vehicular. Each of these groups discussed in detail the issues from the first day, categorizing the topics by research/testing/documentation, education and outreach, and future codes/standards issues. During the discussions, the groups assigned actions to be taken to address each of the issues by the next summit.

A Honeywell Microturbine generates electricity for the Chesapeake Building, and an absorption chiller and desiccant unit use the waste heat to provide space conditioning for the building.

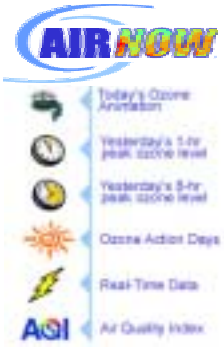
Ronald Fiskum, Office of Distributed Energy Resources, gave the opening and closing addresses for the Summit, and Bill Parks, ADAS, Office of Power Technologies gave a luncheon presentation.

Fuel Cells Summit V was the highest-attended fuel cell summit to date, with more than 120 attendees, growing from 30 participants at the first Fuel Cells Summit.

first phase of the project, which begins June 1, Green Mountain will donate 5,000 trees to the Roy E. Larson Sandyland Sanctuary that is being revitalized by American Forests' Global ReLeaf tree planting program. The second phase of the project begins January 2002, and Green Mountain will donate 5,000 more trees to American Forests restoration projects in Texas. The two organizations have worked together in the past to plant more than 31,000 trees in other areas including Pennsylvania, Connecticut, and California. *PR Newswire*, May 31

EPA Develops AIRNow Web Site to Provide National Air Quality Information

The U.S. Environmental Protection Agency (EPA) has developed a Web site to provide information on national air quality including daily air quality forecasts and real-time air quality updates for more than 100 U.S. cities. *AIRNow* is a joint partnership among EPA and state and local air quality agencies. The web site includes comprehensive air quality maps and forecasts, real time images of air quality and visibility via webcams, air quality forecasts for "air action days" in major metropolitan areas, and suggestions for helping to improve the air quality in the user's area. www.epa.gov/airnow

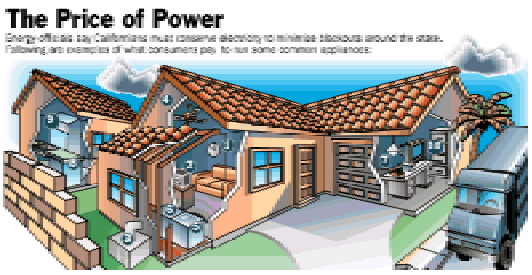


By the Numbers

Examples of what consumers and offices pay to run common appliances and equipment:

10 cents per day	Color TV (20-inch, 265-watt, 21 hrs/week)
$1.29 per day	Central air conditioner (3-ton, 3 hrs/day, 7 days/week)
1-2 cents per hour	Personal computer (at low-power state, 1 hour/day, 7 days/week)
66 cents per load	Electric clothes dryer (1/2-hp motor, 5,000 watt, 3 loads/week)
8 cents per hour	Floor photocopier

Los Angeles Times, "The Price of Power"



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If those increases in capacity are met, domestic energy consumption could be reduced by 1,900 TBtu in 2010 and 3,600 TBtu in 2020.*

CALENDAR OF EVENTS

JUNE 2001

3-6	FEMP Energy 2001 Conference	Kansas City, MO	www.energy2001.ee.doe.gov
3-7	WindPower 2001 Conference	Washington, DC	www.awea.org; laura_keelan@awea.org
3-8	7th International Symposium on Solid Oxide Fuel Cells	Tsukuba, Ibaraki, Japan	sofc7@nimc.go.jp (National Institute of Materials and Chemical Research)
4-6	Advanced Technology Program National Institute of Standards and Technology — National Meeting	Baltimore, MD	www.atp.nist.gov/nationalmeeting
4-7	ASME Turbo Expo-Land, Sea, Air	New Orleans, LA	www.asme.org/igti; Debbie Haught is organizing a microturbine panel.
4-7	International Joint Power Generation Conference & Expo	New Orleans, LA	www.asme.org/conf/ijpgc01; Debbie Haught is presenting.
11	Fuel Cell Transportation Technology Summit	San Jose, CA	Sandra Gadzia; gadzia@sae.org
11-13	International Symp. on DG: Power System & Market Aspects	Stockholm, Sweden	www.ekc.kth.se/ees/workshop/DG.htm
13-15	Natural Gas and Power Generation Strategies: Solving the Natural Gas and Energy Crisis	Tucson, AZ	www.intertechusa.com
17-20	11th Canadian Hydrogen Conf.: Building the Hydrogen Economy	Victoria, BC, Canada	www.iesvic.uvic.ca/cha (Canadian Hydrogen Association)
18-20	APPA National Conference	Washington, DC	www.appanet.org
21-22	Fundamentals of Energy Management	Memphis, TN	Sponsored by FEMP and Association of Energy Engineers www.aeecenter.org/seminars
26	Congressional Fuel Cell Exposition	Washington, DC	Cannon Caucus Room, 345 Cannon House Office Building 11:00 am to 3:00 pm. For more info: gdolan@usfcc.com
27	USCHPA Annual Meeting and Policy Day	Washington, DC	www.nemw.org/uschpa/PolicyDay0601.htm
27-28	TN Wind Workshop	Knoxville, TN	W. Dwight Bailey 404-562-0564

Also if those capacities are met, environmental impacts by 2020 would include significant reductions in emissions: 108 MMT of carbon, 3 million tons of SO_2, and 1.4 million tons of NO_x.*

CALENDAR OF EVENTS

JULY 2001			
9-13	4th International Symposium on New Materials for Electrochemical Syst.	Montreal, Quebec	www.newmaterials.polymtl.ca/eng/congres
10-12	Gas Storage Workshop	Kingston, Ontario	David Quinn; quinn-d@rmc.ca
16-19	2001 National Workshop on State Building Energy Codes	Burlington, VT	www.eren.doe.gov/buildings/codes_standards/buildings/2001natl_workshop.html
24-27	ACEEE Summer Study	Tarrytown, NY	www.aceee.org; Rebecca Lunetta; 302-292-3966
30 - Aug. 1	Green Power Conference	Portland, OR	Tina Kaarsberg, tina.kaarsberg@ee.doe.gov; megan_maguire@nrel.gov
AUGUST 2001			
21-24	International Energy Program Evaluation Conference	Salt Lake City, UT	608-835-6880; marymcc@tds.net
29-30	Integrated Energy Efficiency Conference and Facilities Management and Maintenance Expo	Cleveland, OH	www.aeecenter.org
29-Sep. 3	IEEC Integrated Energy Efficiency Congress	Cleveland, OH	Sponsored in part by FEMP; www.aeecenter.org
SEPTEMBER 2001			
11-13	7th Grove Fuel Cell Symposium	London, UK	www.grovefuelcell.com
17-21	Fifth Biomass Conference of the Americas	Orlando, FL	www.fsec.ucf.edu/bioam; dee_scheaffer@nrel.gov
24-26	Powering the Future—New Strategies and Solutions for Deploying Distributed Power in the Marketplace	Chicago, IL	www.intertechusa.com
30 – Oct. 5	UPEx'01: The Photovoltaic Experience Conference & Exhibition	Sacramento, CA	Jjudd@ttcorp.com; hosted by Sacramento Municipal Utility District; includes distributed energy technologies workshop
OCTOBER 2001			
14-17	National Center for Photovoltaics Program Review	Lakewood, CO	barbara_ferris@nrel.gov, 303-275-3781
24-26	World Energy Engineering Congress	Atlanta, GA	www.agcc.org (includes CHP Expo www.aeecenter.org)
24-27	Excellence in Building 2001	Orlando, FL	www.eeba.org/conference

***Source: "CHP's Role in the Energy and Environment Future of the United States," presentation by R. Neal Elliott, ACEEE, May 24, 2001, Senate Staff Briefing**